

REMARKS

New Claim 15 has been added and support for the new claim can be found, for example, from Claim 9 as originally filed. No new matter is added herein.

Claims 1-6 and 10-15 are currently pending. The following addresses the substances of the Office Action.

Rejection under 35 U.S.C. 103 (a) over Igaki in view of Swanson

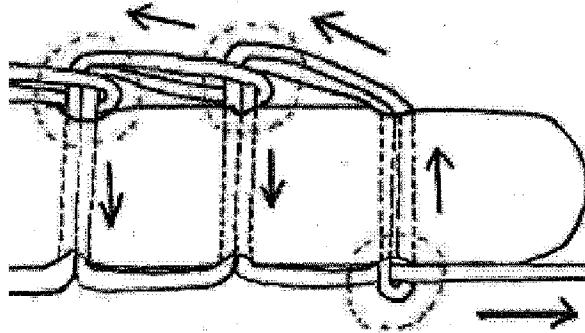
The Examiner rejected Claims 1, 3, 4, 6 and 10-14 under 35 U.S.C. 103(a) as allegedly unpatentable over U.S. Patent No. 5,766,188 to Igaki ("Igaki") in view of U.S. Patent No. 2,811,299 to Swanson *et al.* ("Swanson").

The presently claimed invention related to a tubular suture reinforcement material, an automatic suturing device, and methods of manufacturing and using the reinforcement material and/or device commonly requires that "at the sewing end, a loop next to the sewing end does not pass through another loop anterior to the loop next to the sewing end", and "a thread end at the sewing end passes through the loop next to the sewing end, which is continuous to the thread end, thereby preventing the thread from unraveling without tying a knot at the sewing end and is returned to the sewing end after passing through the loop next to the sewing end".

As the Examiner correctly acknowledged in the Office Action (the first paragraph, page 3), the foregoing features are not taught or suggested by Igaki. Nevertheless, the Examiner asserted that Swanson would remedy the foregoing deficiency of Igaki. However, as discussed below, a careful review of the Swanson reference reveals that the teachings missing from the disclosure of Igaki are not suggested by the Swanson reference.

Fig. 4 of Swanson, which was particularly cited, is schematically illustrated below (Fig. A). As shown in Fig. A, Swanson does not teach removing an anterior loop from the loop in front of the anterior loop, but indicates that each anterior loop surrounded by a dotted-line circle in Fig. A passes though the loop in front of the anterior loop.

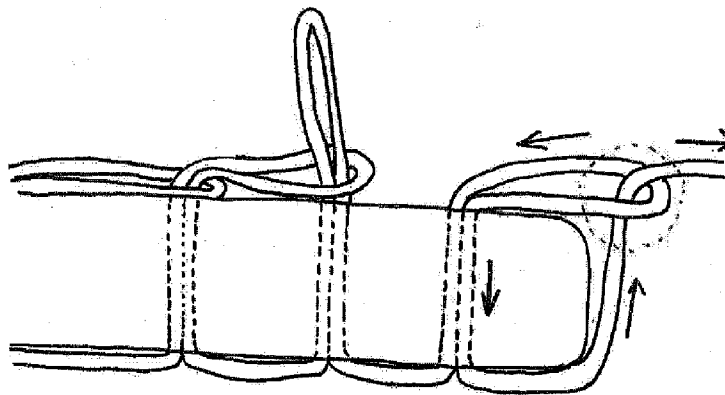
Fig. A from Swanson



In the above mechanism of Swanson for preventing a thread from unraveling, when the thread end is accidentally pulled, the pulling force is transmitted in the direction illustrated by arrows in Fig. A, so that all portions surrounded by the dotted-line circles are firmly tied. It is thus evident that the entire base material is tightened in the mechanism of Swanson.

Accordingly, while the mechanism of Swanson shown in Fig. 4 may prevent a thread from unraveling, it is not the same mechanism recited in applicants' claims. Moreover, the presently claimed methods have a distinct advantage over the mechanism of Swanson. When using the mechanism of Swanson, after the subsequent predetermined suturing process is complete, it is extremely difficult to smoothly draw the thread out from the anterior loop by returning the thread end passed through the loop to the original position and pulling the thread. In contrast, the presently claimed invention is configured to prevent a thread from unraveling, by removing an anterior loop from the loop in front of the anterior loop and passing the extended thread end through an anterior loop continuous to the thread end, as shown in Fig. B below

Fig. B from the present application



In the presently claimed mechanism, when the thread end is accidentally pulled, the pulling force is transmitted in the direction illustrated by arrows in Fig. B; however, the force does not

affect other loop portions. Therefore, when the thread end is pulled, only a portion surrounded by a dotted-line circle in Fig. B is firmly tied; not the entire base material is tightened.

As described above, the mechanism of the presently claimed invention for preventing a thread from unraveling is completely different from that of Swanson, and the mechanism of Swanson does not allow the target material to be easily removed.

In view of the foregoing, Applicants submit that the subject matter of Claims 1, 3, 4, 6 and 10-14 are non-obvious over the combined teachings of Igaki with Swanson, and further with Leopold (U.S. Patent No. 6,352,561), which was also mentioned in the Office Action (page 3), as none of these references teach the mechanism of the presently claimed invention for preventing a thread from unraveling. Accordingly, withdrawal of rejection and reconsideration of the claims is respectfully requested

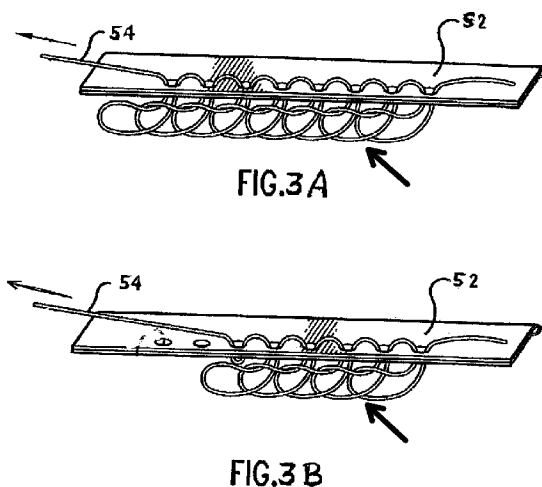
Rejection under 35 U.S.C. 103 (a) over Igaki in view of Campbell

The Examiner rejected Claims 1, 3, 4, 6 and 10-14 under 35 U.S.C. 103(a) as allegedly unpatentable over Igaki in view of U.S. Patent No. 6,984,242 to Campbell *et al.* ("Campbell").

The Examiner asserted that Campbell would remedy the deficiency of Igaki. However, Campbell also fails to teach or suggest the missing features in Igaki including that "at the sewing end, a loop next to the sewing end does not pass through another loop anterior to the loop next to the sewing end", and that "a thread end at the sewing end passes through the loop next to the sewing end, which is continuous to the thread end, thereby preventing the thread from unraveling without tying a knot at the sewing end and is returned to the sewing end after passing through the loop next to the sewing end".

Figs. 3A and 3B of Campbell, which were particularly cited in the Office Action, do not teach the mechanism of the presently claimed invention for preventing a thread from unraveling. In fact, like Swanson, they clearly demonstrate that Campbell fails to teach removing an anterior loop from the loop in front of the anterior loop, and indicate that each anterior loop passes through the loop in front of the anterior loop. For instant reference, Figs 3A and 3B of Campbell are reproduced below.

Figs. 3A and 3B from Campbell



As marked with the arrows in the above figures, at the sewing end, the loop next to the sewing end does pass through another loop anterior to the loop next to the sewing end, which is clearly opposite from the feature cited in the pending claims.

Moreover, Fig. 4 of Campbell shows that a knot is provided to prevent a thread from unraveling, which is completely different from the mechanism of the presently claimed invention, in which a knot at the sewing end is not necessary.

In light of the above, Applicants submit that the subject matter of Claims 1, 3, 4, 6 and 10-14 are non-obvious over the combined teachings of Igaki with Campbell, and further with Swanson and Leopold, if necessary. Accordingly, withdrawal of rejection and reconsideration of the claims is respectfully requested.

Rejection under 35 U.S.C. 103(a) over Igaki and Swanson in further view of Oi

Claim 2 was rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Igaki in view of Swanson in further view of U.S. Patent No. 6,063,097 to Oi et al. ("Oi").

As explained above, neither Igaki nor Swanson provides the mechanism of the presently claimed invention for preventing a thread from unraveling. Further, Oi fails to disclose a mechanism such as that of the present invention for preventing a thread from unraveling, and thereby failing to cure the deficiencies of Igaki and Swanson.

Accordingly, the subject matter recited in Claim 2 is patentable over the combined teachings of the above cited references. Withdrawal of the rejection and reconsideration of Claim 2 is respectfully requested.

Rejection under 35 U.S.C. 103(a) over Igaki and Swanson in further view of Dalessandro

Claim 5 was rejected under 35 U.S.C 103(a) as allegedly unpatentable over Igaki in view of Swanson and in further view of U.S. Patent No. 6,273,897 to Dalessandro *et al.* (“Dalessandro”).

Like Oi, Dalessandro also fails to disclose the mechanism of the presently claimed invention for preventing a thread from unraveling, and thus cannot cure the deficiencies of Igaki and Swanson. Accordingly, Claim 5 is patentable over the combined teachings of the above cited references. Withdrawal of the rejection and reconsideration of Claim 5 is respectfully requested.

Patentability of New Claim 15

New Claim 15 incorporates all the features of Claim 1 through its dependency from Claim 1. As described above, Claim 1 is patentable over the prior art. Accordingly, for at least the same reasons that Claim 1 is patentable, Claim 15 is also patentable over the prior art as well. In addition, Claim 15 recites that “a loop on a side of the sewing end is tied to a loop immediately before the loop, thereby preventing a thread from unraveling.” This feature further distinguishes from the cited references as for its own patentable features. Therefore, favorable consideration of Claim 15 is respectfully requested.

No Disclaimers or Disavowals

Although the present communication may include alterations to the application or claims, or characterizations of claim scope or referenced art, Applicants are not conceding in this application that previously pending claims are not patentable over the cited references. Rather, any alterations or characterizations are being made to facilitate expeditious prosecution of this application. Applicants reserves the right to pursue at a later date any previously pending or other broader or narrower claims that capture any subject matter supported by the present disclosure, including subject matter found to be specifically disclaimed herein or by any prior prosecution. Accordingly, reviewers of this or any parent, child or related prosecution history shall not reasonably infer that Applicants have made any disclaimers or disavowals of any subject matter supported by the present application.

CONCLUSION

Applicants have endeavored to address all of the Examiner's concerns as expressed in the outstanding Office Action. Accordingly, arguments in support of the patentability of the pending claim set are presented above. In light of the above remarks, reconsideration and withdrawal of the outstanding rejections is respectfully requested. If the Examiner has any questions which may be answered by telephone, he or she is invited to call the undersigned directly.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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